

**WASHINGTON DEPARTMENT OF ECOLOGY**  
**ENVIRONMENTAL ASSESSMENT PROGRAM**  
**FRESHWATER MONITORING UNIT**  
**STREAM DISCHARGE TECHNICAL NOTES**

**STATION ID:** 35B150  
**STATION NAME:** Tucannon River at Marengo  
**WATER YEAR:** 2011  
**AUTHOR:** Mitch Wallace

**Introduction**

Watershed Description

The Tucannon River Watershed is located in southeastern Washington State in Garfield and Columbia counties. It flows into the Snake River, four miles upstream of Lyons Ferry.

Historically, the lower elevation areas were covered with canyon grasslands and shrub-steppe vegetation. Much of this land has now been converted to livestock and crop production. Coniferous forests still dominate the higher elevations of the watershed.

The Tucannon River is one of the few Snake River tributaries in this area that contains a spring run of Chinook salmon, *Oncorhynchus tshawytscha*.

Gage Location

The Tucannon River at Marengo stream gage is located 12 miles east of Hwy 12, off the Tucannon River Road. The station is located on the left bank, downstream from the county bridge.

Table 1.

Drainage Area (square miles)	161 (Streamstats)
Latitude (degrees, minutes, seconds)	46° 26' 25" N
Longitude (degrees, minutes, seconds)	117° 45' 01" W

## Discharge

Table 2. Discharge Statistics.

Mean Annual Discharge (cfs)	219
Median Annual Discharge (cfs)	143
Maximum Daily Mean Discharge (cfs)	1180
Minimum Daily Mean Discharge (cfs)	68
Maximum Instantaneous Discharge (cfs)	1450
Minimum Instantaneous Discharge (cfs)	64
Discharge Equaled or Exceeded 10 % of Recorded Time (cfs)	440
Discharge Equaled or Exceeded 90 % of Recorded Time (cfs)	81
Number of Days Discharge is Greater Than Range of Ratings	0
Number of Days Discharge is Less Than Range of Ratings	0

Note: Statistics displayed in Table 2 may not include values in which the predicted discharge exceeds the range of ratings.

## Narrative

Peak flow occurred on April 5, 2011.

## Error Analysis

Table 3. Error Analysis Summary.

Logger Drift Error (% of discharge)	1.0
Weighted Rating Error (% of discharge)	12.5
Total Potential Error (% of discharge)	13.5

## Rating Table(s)

Table 4. Rating Table Summary

Rating Table No.	8	9	
Period of Ratings	10/1/10 to 1/21/11	1/17/11 to 9/30/11	
Range of Ratings (cfs)	36 to 1600	43 to 1600	
No. of Defining Measurements	7	11	
Rating Error (%)	12.4	12.6	

Rating Table No.			
Period of Ratings			
Range of Ratings (cfs)			
No. of Defining Measurements			
Rating Error (%)			

Rating Table No.			
Period of Ratings			
Range of Ratings (cfs)			
No. of Defining Measurements			
Rating Error (%)			

## Narrative

The rating shift was caused by a channel filling, rain on snow event in early January. Eight discharge measurements were taken throughout the water year, ranging from 72 to 432 cfs.

## Stage Record

Table 5. Stage Record Summary

Minimum Recorded Stage (feet)	3.82
Maximum Recorded Stage (feet)	6.44
Range of Recorded Stage (feet)	2.62
Number of Un-Reported Days	7
Number of Days Qualified as Estimates	34
Number of Days Qualified as Unreliable Estimates	0

## Narrative

The unreported days are due to ice-impacted data. The dataset following an ice-impacted period is qualified as an estimate until a manual primary gage index reading can be obtained.

## Modeled Discharge

Table 6. Model Summary

Model Type (Slope conveyance, other, none)	none
Range of Modeled Stage (feet)	
Range of Modeled Discharge (cfs)	
Valid Period for Model	
Model Confidence	

## Surveys

Table 7. Survey Type and Date (station, cross section, longitudinal)

Type	Date
Station, X-sect., Long.	11/3/2010

## Activities Completed

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